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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/258,013 | 02/25/1999 | ALOK KUMAR SRIVASTAVA | 50277-236 | 3268 |

7590 06/03/2002

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EXAMINER

PRIETO, BEATRIZ

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2152

DATE MAILED: 06/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/258,013

Applicant(s)

SRIVASTAVA ET AL.

Examiner

B. PRIETO

Art Unit

2152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. This communication is in response to amendment filed 12/07/01, claims 1-20 remain pending.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case, added claim limitation raises the following uncertainty, claimed name service provides said information to client that request the information and causing nodes that require information to retrieve said participant data from said name services. Being this steps of a method it is not clear which step causes the nodes that require.... Being nodes different from clients, then clients request information and nodes retrieve information caused by something not particularly clear.

4. Quotation of 35 U.S.C. §103(a), which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herriot U.S. Patent No. 5,862,331 in view of Iba et. al. (Iba) U.S. Patent No. 5,835,766 in further view of Ecklund U.S. Patent No. 4,853,843.

Regarding claims 1-2, Herriot features substantially as claimed, teaching;

registering (register means col 3/lines 34-39, 46-56, col 5/lines 32-39) in a name (host 1-3) service (programs running of a server host having network related information, col 1/lines 36-48) participant data that identifies (identification information col 4/line 53-64, col 2/lines 52-61, e.g. name and/or address) a

plurality of participants that are taking and/or forming part i.e. participating in said distributed operation (host the provide instances of a service, that each provide access to resources);

a node (requesting application program, col 3/lines 46-56, e.g. 204, nodes 101-103 acting as clients) that requires information about participants (required information col 4/lines 34-39, col 65-col 5, line 1, information needed to communicated, col 1/lines 12-19, participant entities, i.e. transactions) in said distributed operation to retrieve said participant data (col 4/lines 34-col 5/line 6, data, col 3/lines 36-39) from said name service (requested/returned information, col 5/lines 43-51);

however Herriot does not explicitly teach wherein the step of causing a node to retrieve said participant data includes causing said node to retrieve said participant data in response to said node particularly performing deadlock detection means, nor defining a distributed operation as a unit of work;

Iba teaches means for causing a application node to retrieve information from a database participating in a distributed operation which includes causing said node to retrieve said participant data in response to said node performing an exclusive control means (col 4/lines 12-22, requesting application performing required lock acquisition means, database server participating in distributed transaction operations);

enabling a application node to retrieve data from a database application of a plurality of database servers, said database applications providing information upon request, i.e. a database server which are participating in a distribution transaction (system means, col 1/lines 12-18, 58-42, abstract);

where said distributed operation is an atomic transaction involving said plurality of participants (col 2/lines 34-34);

wherein said name services registers information received from client (col 4/lines 1-32, col 7/lines 66-col 8/line 5) and provides said information to clients (e.g. 17b) that require the information for determining a lock to retrieve said registered information (col 4/lines 23-62);

however the prior art does not explicitly teach where a distributed operation is a unit of work;

Ecklund teaches wherein in a distributed transaction processing environment, where transaction is a unit of work (col 1/lines 10-24).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify existing system with means for causing any requesting program to retrieve data from a database server by particularly enabling deadlock generation and detection means so as to enable (stretch over) access to a plurality of resources operable to both distributed local transaction and distributed global transactions, as taught by Iba. Motivation to combine Ecklund's teachings would be to base distributed transaction processing on a functional standard model, commonly widely used.

Regarding claim 3, the combined teachings as discussed above further teach wherein said distributed operation is a distributed transaction (Herriot, col 1/lines 49-56, and Iba, abstract, col 7/lines 32-40);

registering includes registering in a name service participant data that identifies which database servers of a plurality of database servers are participating in said distributed transaction (Herriot, col 1/lines 49-56 server in a distributed computing environment having register means col 3/lines 34-39, 46-56, col 5/lines 32-39, registering in a name service, databases servers participating in said distributed transaction operation, Iba, col 7/lines 32-40, col 9/lines 9-14, abstract);

Regarding claim 4, the combined teachings as discussed above further teach further including the step of causing updates to said participant data to identify a new participant in said distributed operation (Herriot, col 2/lines 50-61, updating means col 6/lines 46-50 comprising identification of new/added participant).

Regarding claim 5, the combined teachings as discussed above further teach wherein said distributed operation is a distributed database transaction being

executed by a set of transaction processes (lba, col 1/lines 20-24) coordinated by transaction management means (a coordinator process) (lba, col 1/lines 58-42, distributed transaction processing means, col 7/lines 32-460; the method further includes the step of said coordinator process causing a new process associated with name service participant data (Herriot, updates identify new host of services (application/process) added, col 6/lines 46-50, which identifies which database server of said plurality of database server participate in said distributed database transaction, wherein updates means causing to said participant response to said new process participating in said distributed database transaction; (Herriot, registering new (added) services/host, col 2/lines 56-61, lba, distributed database transactions, col 7/lines 32-40, col 9/lines 9-14).

Regarding claim 6, comprises the combined limitation discussed on claims 1-3 and 5, same rationale is applicable;

Regarding claim 7 the combined teachings and limitations as discussed in claims 1-5 above further teach the step of assigning a transaction identifier to said distributed database transaction (Herriot, identify means, col 2/lines, 52-61, name service comprising identifying means, col 4/lines 34-56, of participants in distributed operations being distributed transactions, name service having said participant data comprising identifying data of database servers participating in said distributed transactions, as discussed above); and the step of causing a node (requesting application program, col 3/lines 46-56, e.g. 204, nodes 101-103 acting as clients) that requires information about participants (required information col 4/lines 34-39, col 65-col 5, line 1, information needed to communicated, col 1/lines 12-19) in said distributed operation to retrieve said participant data (col 4/lines 34-col 5/line 6, data, col 3/lines 36-39) from said name service (requested/returned information, col 5/lines 43-51), requested information from said name service distributed, disseminated, i.e. published data associated with said transaction identifier (identifier of a database participating in a distributed transaction (transaction identifier), discussed above.

Regarding claims 8-10, the combined teachings as discussed above further teach wherein name service process receiving a request from a first requesting process to supply said participant data from one structure residing on multiple or instances of a server, wherein said name service process and said first requesting process reside on said node (Herriot, col 3/lines 46-64 client requesting programs running on name service host) of from one data structure, col 6/lines 46-54).

Regarding claims 11-20, these claim comprise the computer-readable medium carrying one or more sequences of one or more instructions, wherein the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of the method disclosed on claims 1-10, same rationale is applicable.

RESPONSE TO ARGUMENTS

6. Applicant argues (A) prior art of record does not teach claim limitation as amended, specifically, wherein said distributed operation is a unit of work involving said plurality of participants;

wherein said name server registers information received for clients and provides said information to clients that request the information; because although identified components by the name service are capable of performing work they do not participate in "a particular unit of work"

7. In regards to argument A, it is respectfully noted that according to applicant's specification a distributed transaction is a transaction executed by database server, which may reside on multiple nodes (page 3, lines 11-12). Nodes may have resources that are involved in a dead lock, and in more general, participants that may be involved in a distributed operation, such as a distributed transaction, (see page 4, lines 4-7). A transaction is an atomic unit of work. For

example, a transaction T1 may seek exclusive ownership of resource R1 and R2. If R1 is available and R2 is currently exclusively owned by another transaction T2, transaction T1 may acquire exclusive ownership of R1 but must wait for R2 to become available, (see page 1, lines 11-17).

8. In response to argument A, Iba teaches name service (WFG table) includes participant data that identified a plurality of participants entities (col 5/lines 43-50, participant data, e.g. address, transaction identifier and connection relations of each node correspond to mutual wait-for relation between transactions, col 5/lines 43-50, i.e. participant data) that are participating in a distributed operation, such as a distributed transaction which seeks access to a resource (col 2/lines 62-65, participants that may be involved in a distributed operation, such as a distributed transaction, e.g. a transaction involving seeking exclusive ownership of resource, col 42-col 2/line 13), where said distributed operation is an atomic distributed transaction (i.e. the transaction is performed in its entirety, it's either completed or aborted, i.e. atomic) involving said plurality of participants (col 2/lines 34-34); wherein said name services registers information received from client (registers information received from client requesting permission to occupy a resource, col 4/lines 1-32, requesting and waiting entities, register in response to received client request, col 7/lines 66-col 8/line 5) and provides said information to clients (e.g. 17b) that require the information for determining a lock to retrieve said registered information (col 4/lines 23-62). Transaction defined as an atomic unit of work is well known in the art, see pertinent prior art not relied on.

Related U.S. Patents:

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure; pertinence is presented in accordance with to MPEP§ 707.05. Copies of documents cited will be provided as set forth in MPEP§ 707.05(a):

U.S. Patent No. 4,665,520 (05/12/1987): In a distributed multiprocessor system based on a transaction model, computations are divided into units of work called "transactions" col 1/lines 45-50).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Prieto, B.** whose telephone number is **(703) 305-0750**. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, **Mark H. Rinehart** can be reached on **(703) 305-4815**. The fax phone number for the organization where this application or proceeding is assigned is **(703) 308-6606**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is **(703) 305-3800/4700**.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 746-7238, (for Official After-final communications; please mark
"EXPEDITED PROCEDURE", for other Official communications; (703) 746-7239)

Or:

(703) 465-7240 (for Non-Official, Draft communications, status query,
please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington. VA., Sixth Floor (Receptionist).



B. Prieto

Patent Examiner

June 2, 2002

**MEHMET B. GECKIL
PRIMARY EXAMINER**

